Appl. No.

10/759,785

**Filed** 

**January 16, 2004** 

REMARKS

Claims 3-4, 6-9, 14-15, and 19-30 have been cancelled. Claims 5 and 10 have been amended. Claims 1-2, 5, 10-13, and 16-18 are now pending in this application. Claims 11-13 and 16-18 are withdrawn. Support for the amendments is found in the existing claims and the specification as discussed below. Accordingly, the amendments do not constitute the addition of new matter. Applicant respectfully requests the entry of the amendments and reconsideration of the application in view of the amendments and the following remarks.

The specification has been amended throughout to designate SIGMACELL® and AVICEL® as trademarks. Additionally, the specification at paragraph 0013 has been amended to provide a chemical description for SIGMACELL® and AVICEL®. AVICEL® is defined as a microcrystalline cellulose. Support is found in Attachment A which includes a product description from the Sigma-Aldrich online catalog and also a description from the Merck index (Merck index, 9<sup>th</sup> edition,(Windholz, et al., eds.), Merck & Co., 1976). SIGMACELL® is defined as a high purity cellulose powder. Support is found in Attachment B which contains descriptions of the product from the Sigma-Aldrich online catalog.

The inventor provides the following additional information. SIGMACELL® and AVICEL® are available from Sigma-Aldrich. Both are pure crystalline which means that there is no amorphous cellulose present.

The claims have been amended to replace "cellulose derivative" with "carboxymethylcellulose" in claims 5 and 10. Claim 6 has been canceled.

The above is believed to be responsive to the remaining issues in the above-referenced application. In view of the present submission taken with the Amendment filed June 7, 2007, withdrawal of all grounds of rejection is respectfully requested.

Rejoinder

Claims 11-13 and 16-18 remain withdrawn from consideration. Applicant respectfully submits that the withdrawn claims are commensurate in scope with claims 1 and 5 from which they depend and which are believed to be in condition for allowance. Rejoinder is requested.

**CONCLUSION** 

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In view of Applicant's amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: Aug 2, 2007

By:

Che Swyden Chereskin, Ph.D.

Registration No. 41,466

Agent of Record

Customer No. 20,995

(949) 721-6385

4084536 080107

# ATTACHMENT A

(1923); Charlton et al., ibid. 1926, 89; Zemplén, Ber. 59, 1254 (1926); Haworth et al., J. Chem. Soc. 1927, 2809; Peterson, Spencer, J. Am. Chem. Soc. 49, 2822 (1927); Helferich et al., Ber. 63, 992 (1930); Hess, Dziengel, ibid. 68, 1594 (1935); Hassid, Ballou in The Carbohydrates, W. Pigman. Ed. (Academic Press, New York, 1957) p 490. Synthesis: Haskins et al., J. Am. Chem. Soc. 64, 1289 (1942). Review. Pazur in The Carbohydrates vol. 2A, W. Pigman et al., Eds. (Academic Press, New York, 2nd ed., 1970) pp 109-110.

Minute crystals from dil alcohol which retain 0.25 to 0.50 mol water after drying in vacuo. Indifferent taste. Dec 225°. Shows mutarotation. [ $\alpha$ ] $_{D}^{(2)}$  + 14.2°  $\rightarrow$  +34.6° (15 hrs, c = 8). One gram dissolves in 8 ml water, in 1.5 ml boiling water; almost insol in abs alc and ether. Reduces Fehling's soln. Hydrolysis with acid or emulsin yields 2 mols  $\beta$ -Dglucose. Not fermented by brewers' yeast, maltase, or invertase.

Cellobiose phenylosazone, C24H32N4O9, mp 198-200°.

[ $\alpha$ ] $_{\rm D}^{18}$  -6.5° (pyridine + alc). Octaacetyl-aldehydro-cellobiose, C<sub>28</sub>H<sub>38</sub>O<sub>19</sub>, mp 105-110°. [ $\alpha$ ] $_{\rm D}^{20}$  + 17.7° (c = 3 in chloroform).

Octaacetyl- $\alpha$ -cellobiose,  $C_{28}H_{38}O_{19}$ , mp 229°.  $[\alpha]_D^{20}$  +41° (c = 6 in chloroform).

Octaacetyl- $\beta$ -cellobiose, mp 202°. [ $\alpha$ ] $_{\rm D}^{26}$  -14.7° (c = 5 in

1917. Cellophane. Francephane. Transparent, flexible cellulose sheeting made from viscose. The word "cello-phane" is not a trademark in the U.S.

1918. Celluloid®. Pyralin; Zylonite. Prepd from nitrocellulose and camphor.

Colorless, amorphous mass. Flammable. Prone to spontaneous decompn which is retarded or prevented by the addition of urea, ZnO, MgCO<sub>3</sub>, diphenylamine, etc. It is rendered less flammable by addition of ammonium phosphate. Softens in boiling water; sol in acetone.

USE: Plastic material for manuf of toilet articles, toys, photographic films; substitute for amber, ivory, ebonite, tortoise shell; also in surgery for bandages and in dentistry as substitute for rubber.

1919. Cellulose.  $(C_6H_{10}O_5)_n$ . Polysaccharide with the glucose units linked as in cellobiose. Chief constituent of the fiber of plants; cotton is the purest natural form, contg about 90%. Rayon is regenerated cellulose. Books: C. Dorée, The Methods of Cellulose Chemistry, (Chapman & Hall, London, 1947); T. Lieser, Kurzes Lehrbuch der Cellulosechemie, (Gebrüder Borntraeger, Berlin, 1953); S. D. Antonovskii, Chemistry of Wood and Cellulose, (Vsesoyuz. Zaochnyi Lesotekh Instit., Leningrad, 1954); E. Ott et al., Cellulose and Cellulose Derivatives, vols. 1-3 (Interscience, New York, 1954, 1955). Reviews: Several authors in Encyclopedia of Polymer Science and Technology vol. 3, N. M. Bikales, Ed. (Interscience, New York, 1965) pp 131-539; Shafizadeh, Pure Appl. Chem. 35, 195-208 (1973).

White substance. Practically insol in water or other usual solvents, but is dissolved by concd soln of zinc chloride, by ammoniacal copper hydroxide soln; also by caustic alkali with carbon disulfide.

Microcrystalline form, Avicel. Prepn and manuf of crystallite cellulosic aggregates: Battista, *Ind. Eng. Chem.* 42, 502 (1950); Battista, Smith, U.S. pats. 2,978,446 and 3,141,-875 (1961 to Am. Viscose and 1964 to FMC). Non-fibrous powder. Particle shape: rigid rods. Refractive index: 1.55. Bulk density: 18-19 lb/cubic foot. Practically insol, but dispersible in water; partially sol with swelling in dil alkali; practically insol in and resistant to dil acid; practically insol and inert in organic acids.

USE: Fibrous form is the basic material for the textile and paper industries. Nitrated it yields nitrocellulose used for

manuf of explosives, collodion, lacquers. Basic material also for cellulose acetate, cellulose xanthate. Also used in chromatography and as ion exchange material especially in the form of derivatives such as DEAE-cellulose (diethylaminoethyl cellulose) and ECTEOLA-cellulose, q.v. Microcrystalline forms of cellulose are used as combination binder-disintegrants in tableting, as separatory medium in thin-layer and column chromatography. Colloidal cellulose particles aid in stabilization and emulsification of liquid and foam systems. May be used as pure cellulose raw-material. Incorporation of cellulose crystallite aggregates in foods to reduce caloric content: Battista, U.S. pat. 3,023,104 (1962 to American

1920. Cellulose Acetates. Partially acetylated cellulose, q.v. Several acetates of cellulose are known, which differ from one another only in the degree of acetylation. In triacetates, no less than 92% of the hydroxyl groups are acetylated. In characterizing the degree of acetylation, percent acetyl value and percent combined acetic acid are used. All cellulose acetates are obtained by treating cellulose with acetic anhydride at various temps for different lengths of time to produce amorphous white solid material in granular, flake, or powder form from which fibers may be formed by extrusion. In the plastics industry, it is usual to acetylate fully and then to lower the acetyl value to 52-56% by partial hydrolysis. Such material when compounded with suitable plasticizers gives a tough thermoplastic product. For review and list of acetate and triacetate trade names see Kirk-Othmer Encyclopedia of Chemical Technology vol. 1 (Interscience, New York, 2nd ed., 1964) pp 109-138.

Commercial products do not have sharp melting points. Solubility is affected by the acetyl value; the triacetate is insol in water, alcohol, ether, but sol in glacial acetic acid; the tetraacetate is insol in water, alcohol, ether, glacial acetic acid, methanol; the pentaacetate is insol in water, but sol in alcohol.

USE: Manuf rubber and celluloid substitutes, nonflammable photographic and cinema films, airplane dopes, varnishes and lacquers, filaments, phonograph records; water-proofing fabrics and rendering balloons gas-tight; sizing and finishing fabrics; coating skins; insulating electric wires; tow for cigarette smoke filters.

1921. Cellulose Ethyl Hydroxyethyl Ether. Ethyl hydroxyethyl cellulose; Etulos. Prepr. Jullander, C.A. 48, 6114g (1954); idem, Ger. pat. 1,000,367 (1957 to Mo och Domsjö Ab.), C.A. 54, 5088f (1960). Use as laxative: Alm, C.A. 50, 2122i (1956); idem, Am. J. Dig. Dis. [NS] 2, 493

R is H,  $--\text{CH}_2\text{CH}_3$ , or  $--\text{CH}_2\text{CH}_2\text{OH}$ 

THERAP CAT: Carthartic.

1922. Celsian. BaO.Al<sub>2</sub>O<sub>3</sub>.2SiO<sub>2</sub>—barium aluminum

1923. Centalun. 2-Methyl-1-phenyl-3-butyne-1,2-diol; 3,4-dihydroxy-3-methyl-4-phenyl-1-butyne; 3-methyl-3,4dihydroxy-4-phenyl-1-butyne. C<sub>11</sub>H<sub>12</sub>O<sub>2</sub> mol wt 176.21. C 74.97%, H 6.86%, O 18.16%. Prepn: Brit. pat. 966,115 (1964 to Boehringer, Ing.).

dl-Forn mg/kg: THERAP

1924. ( oxy-2-(3benzopyrc vone 7-£ 55.17%, H iacea L., 833, 1168 (1964).

Monohy  $(\log \epsilon 4.3)$ acetone; p

1925. C square-ster angularis ( siana and southern C Gentiopicr (1954); 88, Am. J. Pho THERAP (

1926. C Dried flow Robins. Formerly k lensis Wille amarogenti (1955). THERAP C

1927, C bloodwort. tum Gilib. Habit. Eur Constit. G 87, 1357 (1

THERAP C 1928. C taurium sp. Gentianacei North Ame sin: Korte. hypotensive 1, 219 (194

1929. Ce regulating Michel, Sar Santenoise of respirato: 671 (1957). et al., Bull. 155, 1529 (1 (Bucharest)

1930. Ce (hydroxyme 2-carboxylic 7-(2-cyanoa azabicyclo[sodium 7-( 36278-Ba; ( 43.21%, **H** 3 Prepn: Net

Email F

Last 5 P 11365

11363

S6790

S5504

S3504



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**Product Nam** Relat Avicel® PH-101 11365 FT-IR F Fluka BioChemika **MSDS** Certific **Synonym** Cellulose microcrystalline Enter I Cellulose powder More Ir Cellulose 🖒 Link Cotton linters 9004-34-6 Similar **CAS Number EG/EC Number** 2326749 Relate MFCD00081512 MDL number 🖺 Page Print Pr zoom 1 of 1 Bulk Qi Ask A S

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## **Price and Availability**

## **Click For Pricing and Availability**

**Descriptions** 

Application High purity cellulose powders for partition chromatography.

Legal Information

® Registered Trademark of FMC Corporation

Avicel is a registered trademark of FMC Corp.

**Properties** 

product line

BioChemika

particle size

~50 µm

References

Merck

Merck 13,1977

reference

RegBook 1 (2), 3159:J / Structure Index 1, 500:B:3 / Structure Index 1, 500:A:3

Safety

**WGK Germany** 

1

**RTECS** 

FJ5691460

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#### **Related Categories**

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S5504

S3504



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**Product Nam** Relat Avicel® PH-101 11363 FT-IR F Ph Eur Fluka **MSDS** Certific Cellulose microcrystalline Synonym Enter I Cellulose powder More Ir Cellulose Link Cellulosum microcristallinum Cotton linters Similar 9004-34-6 Page **CAS Number EG/EC Number** 2326749 Print Pi MDL number MFCD00081512 Bulk Qi zoom 1 of 1 Ask A 5 Email F

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Price and Availability			
Click For Pricing	and	Availab	ility

**Descriptions** 

Application

High purity cellulose powders for partition chromatography.

**Legal Information** 

® Registered Trademark of FMC Corporation

Avicel is a registered trademark of FMC Corp.

**Properties** 

grade

Ph Eur

pharmacopeia

testing & handling conforms to Pharmacopeia

References

Merck

Merck 13,1977

reference

RegBook 1 (2), 3159:J / Structure Index 1, 500:B:3 / Structure Index 1, 500:A:3

Safety

**WGK Germany** 

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**RTECS** 

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## ATTACHMENT B



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**Product Nam** Relat Sigmacell Cellulose S3504 MSDS Sigma-Aldrich Type 20, 20 µm Specific Certific Cellulose powder Synonym Enter I Cellulose Certific Cotton linters Enter I **CAS Number** 9004-34-6 More Ir 2326749 **EG/EC Number** MFCD00081512 Link MDL number Similar Relate zoom 1 of 1 🖺 Page Print Pi

Expand/Collapse All

### **Price and Availability** Click For Pricing and Availability

**Descriptions** 

High purity cellulose powders for partition chromatography. Application

Last 5 P S3504

Bulk Qı

Ask A 5

Email F

Makes extremely durable layers. Sharp separations for amino acids, sugars and

other hydrophilic substances. Development time as short as 2 hours for 8" plates.

For TLC, simply blend a 15-20% aqueous slurry for about one minute and coat Reconstitution

plates; dry at room temperature. Usually does not require activation before use.

Sigmacell is a trademark of Sigma-Aldrich Biotechnology LP. **Legal Information** 

**Properties** 

Type 20 type

20 µm particle size

References

Merck 13,1977 Merck

RegBook 1 (2), 3159:J / Structure Index 1, 500:B:3 / Structure Index 1, 500:A:3 reference

Safety

**RTECS** 

**WGK Germany** 

F 3

**Related Categories** 

... Bulk Asdorbents for TLC > Cellulose TLC Adsorbents

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**Product Nam** Relai Sigmacell Cellulose S5504 **MSDS** Sigma-Aldrich Type 50, 50 μm Specific Certific Cellulose powder Synonym Enter I Cellulose Certific Cotton linters Enter I 9004-34-6 **CAS Number** More Ir 2326749 EG/EC Number MFCD00081512 Link MDL number Similar Relate Page zoom 1 of 1 Print Pr Expand/Collapse All Bulk Qı Price and Availability Ask A 5 **Click For Pricing and Availability** Email F **Descriptions Application** Faster development times than Type 20 (1-4 hours) with a little loss of resolution. Last 5 P May yield a colored background. S5504 S3504 High purity cellulose powders for partition chromatography. For TLC, simply blend a 15-20% aqueous slurry for about one minute and coat Reconstitution plates; dry at room temperature. Usually does not require activation before use. Sigmacell is a trademark of Sigma-Aldrich Biotechnology LP. Legal Information **Properties** Type 50 type 50 µm particle size References Merck Merck 13,1977 RegBook 1 (2), 3159:J / Structure Index 1, 500:B:3 / Structure Index 1, 500:A:3 reference Safety **WGK Germany** 1 **RTECS** FJ5691460

**Related Categories** 

F

... Bulk Asdorbents for TLC > Cellulose TLC Adsorbents

3

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**Product Nam** Relai Sigmacell Cellulose S6790 **MSDS** Sigma-Aldrich Type 101, Highly purified, fibers Specific Certific Cellulose powder Synonym Enter I Cellulose More Ir Cotton linters 🖍 Link **CAS Number** 9004-34-6 **EG/EC Number** 2326749 Similar MDL number MFCD00081512 Relate 🖺 Page Print Pi zoom 1 of 1 Bulk Qi Ask A S Expand/Collapse All Email F Price and Availability **Click For Pricing and Availability** Last 5 P S6790 **Descriptions** S5504 Extremely useful for rapid TLC of nucleotides, amino acids, sugars, phenolics, Application S3504 etc. Development time only 0.5 to 3 hours for 8" plates. Usually yields a clear colorless background. High purity cellulose powders for partition chromatography. For TLC, simply blend a 15-20% aqueous slurry for about one minute and coat Reconstitution plates; dry at room temperature. Usually does not require activation before use. Sigmacell is a trademark of Sigma-Aldrich Biotechnology LP. **Legal Information Properties Type 101** type form fibers References Merck Merck 13,1977 RegBook 1 (2), 3159:J / Structure Index 1, 500:B:3 / Structure Index 1, 500:A:3 reference Safety **WGK Germany** 1 **RTECS** FJ5691460 F 3

#### **Related Categories**

... Bulk Asdorbents for TLC > Cellulose TLC Adsorbents

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